

THE B&O MODELER



Volume 3, Number 1

JANUARY/FEBRUARY 2007



BUILDING A CLASS O-63D COIL STEEL GONDOLA

HO SCALE A-17 COACH

A publication of the B&O Railroad Historical Society (B&ORRHS) for the purpose of disseminating B&O modeling information. Copyright © B&ORRHS – 2005, 2006, 2007 – All Rights Reserved. May only be reproduced for personal use. Not for sale other than by the B&ORRHS.

Editor – Bruce D. Griffin at bruce_griffin@earthlink.net

Associate Editor – Greg LaRocca at larocca3@zoominternet.net

Did You See It? Editor – Ross Pollock at info@borhs.org

Model Products News Editor – Eric Hansmann at eric@hansmanns.org

Modeling Committee Chair – Bill Barringer at barbllsn@aol.com

Manuscripts and photographs submitted for publication are considered to be gratis and no reimbursement will be made to the author or the photographer(s) or his/her representative(s). Please contact the Editor with comments and corrections and for submission guidelines. Statements and opinions made are those of the authors and do not necessarily represent those of the B&ORRHS.

Cover Photos – Top, O-63d Gondola – Jim Kubanick photograph. Bottom, A-17 Coach –John Teichmoeller photograph.

AN INVITATION TO JOIN THE B&O RAILROAD HISTORICAL SOCIETY

The Baltimore and Ohio Railroad Historical Society is an independent non-profit educational corporation. The Society's purpose is to foster interest, research, preservation, and the distribution of information concerning the B&O. Its membership is spread throughout the United States and numerous foreign countries, and its scope includes all facets of the B&O's history. Currently the Society has over 1600 registered members.

Members regularly receive a variety of publications offering news, comments, technical information, and in-depth coverage of the B&O and its related companies. Since 1979, the Society has published a quarterly magazine, *The Sentinel*, dedicated to the publication of articles and news items of historical significance. Other Society publications include monographs, calendars, equipment rosters, and reprints of original B&O source material. Their

purpose is to make otherwise unobtainable data available to the membership at reasonable cost.

Membership in the Society is a vote of support and makes all of the Society's work possible. It provides those interested in the B&O with a legitimate, respected voice in the railroad and historical communities. By working together, B&O fans are able to accomplish much more than by individual efforts. No matter how diverse your interests or how arcane your specialty, others share your fascination with America's most historic railroad. We invite your participation. Several classes of [annual memberships](#) are available, Regular memberships are only \$35.00. If you would like to join, click [here](#) to fill out our [membership application](#), print a copy and mail it to:

B&ORRHS

ATTN: Membership

P.O. Box 24068

Baltimore, MD 21227-0568

FROM THE EDITOR

Why Write an Article, I Barely Have Enough Time to Build Models?

Last month I saw a USRA Light Mikado in the Outlet Section of the Broadway Limited Imports website for only \$149.99 including shipping. It was not decorated for the B&O, but I knew I was going to modify it, so I didn't care. Steam locomotives don't have too many decals and the basic colors are black with graphite in a few areas. It seemed like a pretty easy project, plus the model comes with sound that is

useable with my basic DC power system. Before I go any further let me say that the sound system adds a whole new dimension to my small layout and now I want sound for everything on the layout.

Back to my point. Why write an article? When I started this project I thought I would buy the locomotive, add a few details and get it running. I received the locomotive quickly and went about researching the details. There were much more than I

expected and there were pipes and valves running everywhere. Maybe since the folks in the Society and on the Yahoo Group now assume I will write an article about most of my modeling projects they are most willing to share information to an extreme. I don't mean to imply that normally our friends in the Society don't share information, only that I feel like I get instant replies. And every reply includes photos and diagrams. I think they reply quickly and share extra information because they think I will take the time to write up what I have learned and share it back. The folks that have done a lot of research are willing to share it, but would prefer to share it once and have it published for others to access. Having done some research for projects I now appreciate the effort and time that is required. For those of you that have been on the B&O Yahoo Group or another listserve for years understand the feeling when a newcomer asks a question that has taken years to research and much discussion and their first post is something like "Please tell me how to build a M-12 Boxcar as it appeared on June 20, 1912, and what color were the brake shoes."

Again, back to my point. Are you wondering if the Archives contains a photo or drawing of something? If you are going to model it and write about it in the B&O Modeler or research it further to write an article for The Sentinel, then Nick Fry and the folks who work on our Archives every month will put your project to the front of the list and send you info

within a week or two. They have original source material on many topics so you are getting awesome assistance costing you the time you put into writing the article. Why write an article? Because it saves you so much time when doing the research to build the model.

One person's models we have featured a number of times already are those of O scale modeler Ed Bommer. Ed attended the 2006 O scale National Convention in Parsippany, NJ this summer and won awards for six of the models he took with him. All were B&O or B&O related. Three (cement hopper/box car, the 4 wheel caboose and the snow flanger) have already appeared in *B&O Modeler* and they were at the B&O RR HS Convention at Staunton VA in 2005. At the O Scale National, they respectively got first place freight, first place caboose and second place maintenance of way.

The B-8aa baggage car (November/December 2005 issue of *B&O Modeler*) took second place and a recently rebuilt Kasiner observation car as B&O's "Genesee River" took first place in the passenger category. A model of SIRT 29 (class D 0-6-0 camelback) took first place for steam locomotives. By the way, the little B&O privy from the 2005 Staunton Convention went along but didn't win a prize. It was beat out by a large, fully detailed depot and a 'loaded' maintenance barge. Congratulations to Ed, but I guess it shows you can't win them all.

NEWS FROM THE COMPANY STORE

BY GEORGE STANT

Why should you become a member of the Baltimore and Ohio Railroad Historical Society? Besides belonging to one of the finest railroad organizations in existence, you will also get some nice discounts on the multitude of items that we sell through our Company Store. For example as a Society member, you can save up to 20% on most books over the price we charge to the general public. And on our models, you can save from between 10% and 15%, more with some of the specials that we send out to members. The same goes for the more than 175 reprints of manuals, track plans, and other documents taken from B&O historical records. And remember the

profits from these sales go directly back to the Society's ongoing preservation efforts.

If you want to learn more about joining the Society, make sure you read "An Invitation to Join the B&O Railroad Historical Society" earlier in this edition of *The B&O Modeler*.

A few new products including a Plans CD from the Archives and new series of Kadec Covered Hoppers are being offered. The Company Store is now accepting credit cards for purchases. Check the Historical Society web site for details.



Edwin Kirstatter's scale gets calibrated on his HO scale B&O layout. Note the red painted couplers, while usually it was illegal to paint couplers, scale test cars appear to have been an exception. Edwin Kirstatter photograph.

MODEL PRODUCT NEWS

ERIC HANSMANN

HO Scale

Funaro & Camerlengo <http://www.fandckits.com/> is now producing a M-151/m covered wagon automobile boxcar HO model.. The kit features a one-piece body; decals, and Tichy Train Group grab irons, detail parts, and brake parts. \$39.99.

Funaro & Camerlengo
10 Funaro Court
Honesdale, PA 18431
(570)-224-4989
fandc@ezaccess.net



Funaro & Camerlengo photo

UPDATES AND ERRATA

Following up on John Teichmoeller's story about modeling the Wellsville, Addison & Galetton Railroad, Michael Shaffer sent me this link about WAG Russell Snow Plows <http://www.wagplow.org/> . The link has photos and history of the snow plows used on the WAG and restoration efforts for the plows currently located at the Rochester & Genesee Valley Railroad Museum Industry in New York.

BUILDING A CLASS O-63D COIL STEEL GONDOLA IN HO SCALE

BY JIM KUBANICK

PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.



Background

My initial interest in coil gondolas was sparked many years ago when I observed cars of the B&O, NKP and PRR operating in the Pittsburgh, PA and Lorain, OH areas. It had been my intent to build at least one model of one of these distinctive gondolas but a lack of good photos and supporting technical information kept the project from progressing much beyond the dream stage. At some point, I did come across photos and video shots of B&O and NKP versions but there was not a good model available that was close enough to kitbash into one of these. I had picked up a Con-Cor coil gondola kit at a flea market at one time, but when the time came about to get serious about this project, this car was also judged to be too far off to fit my needs. It did, however, serve as the basis for a fairly accurate model of a PRR G33e mill gondola.

Things changed with the recent release by Sunshine Models of a series of Bethlehem fixed and drop end gondolas. Among these releases was the B&O O-59a (Sunshine kit # 70.4). In comparing photos of the O-59a and the O-63 series, I found that they matched

very closely in rib, side panel, and rivet pattern and the project began to look very do-able.

As I do not have a lot of time or resources for in-depth research, I contacted my good friend Greg LaRocca for assistance on this aspect of the project and he responded splendidly with a packet of information which started the project rolling in a serious fashion.

The Prototype

The B&O converted 224 class O-63 gondolas, built in 1951, into class O-63d coil gondolas in 1956, numbers 351000-3511123, and, in 1957, numbers 351124-351223, by fitting them with Republic corrugated coil hoods and appropriate coil cradles and related apparatus. Additionally, B&O rostered coil gondolas numbers 351499, 355000-355080 and 451040-451139 and gondolas numbered 351500-351524 which were fitted with 3-piece roofs. See Table 1 for a listing of steel service gondolas derived from class O-63 and later class gondolas. I have no information on how long any of these cars remained in service in the configurations listed.



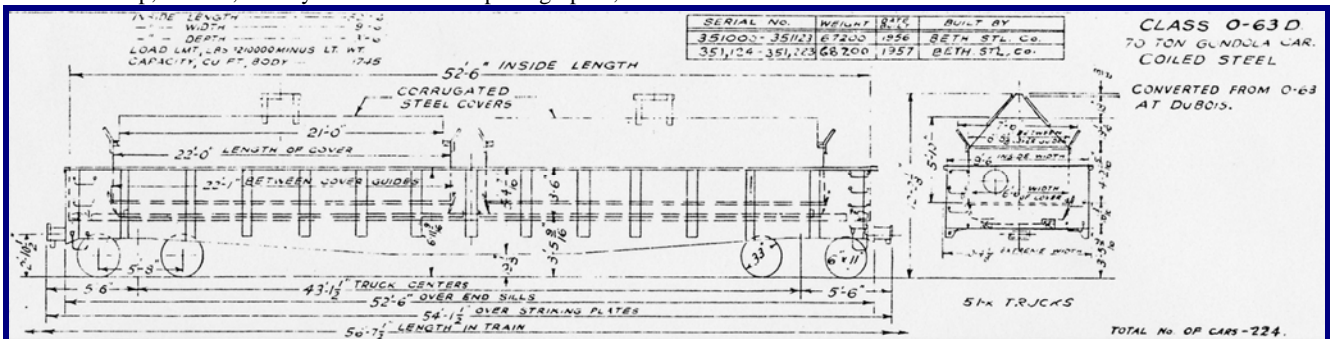
O-63d #351032 at Willard, Ohio on November 22, 1964. Photograph by Eileen Wolford Barnard, B&ORRHS Collection



O-63d #351171 at Willard, Ohio on November 22, 1964. Photograph by Eileen Wolford Barnard, B&ORRHS Collection



Dubois Car Shop, Dubois, Pennsylvania. Unknown photographer, B&ORRHS Collection.



B&O Class O-63D Equipment Diagram, Revision B, July 21, 1959.

Table 1: Survey of B&O Special Steel Service Gondolas, 1931 Through 1964

Class	Use	Road No.	Weight	Build Date	Built By	Conversion Details	Total No. Cars	Notes
O-41a	Tin Plate	360000-360001	50,700	1931	B&O	From O-41 At Mt. Clare, 1936	2	Removable roof, converted to O-41 3350317, 350737 in 1942
O-41b	Pipe	361000	50,600	1931	B&O	From O-41 At Mt. Clare, 1937	1	Converted back to O-41 in 1942
O-63	n/a	264381	62,000	1951	Beth. Stl. Co.	Mt. Clare, 1953	1	Perhaps experimental roof
O-63d	Coiled Steel	351000-351123	67,200	1956	Beth. Stl. Co.	From O-63 at Dubois	124	Corrugated steel covers
O-63d	Coiled Steel	351124-351223	68,200	1957	Beth. Stl. Co.	From O-63 at Dubois	100	Corrugated steel covers
O-63e	Bar Steel	351500-351524	78,200	1957	Beth. Stl. Co.	From O-63 at Dubois	25	3 pc. roof, 4 adj bulkheads
O-63f	Coiled Steel	351499	66,000	1957	Beth. Stl. Co.	From O-63 in 1957	1	Originally classed O-63d
O-65b	Coiled Steel	355000-355139	N/A	1959	Beth. Stl. Co. & B&O	N/A	140	Corrugated steel covers
O-65c	Bar Steel	355300-355349	74,600	1957	Beth. Stl. Co. & B&O	N/A	50	3 pc. roof, 3 adj. bulkheads
O-65d	Tin Plate	355450-355459	65,700	1957	Beth. Stl. Co. & B&O	N/A	10	3 piece roof
O-65e	Bar Steel	355350-355424	77,800	1957-1960	Beth. Stl. Co. & B&O	From O-65 in 1963-64	75	3 pc. roof, 3 adj. bulkheads
O-65f	Tin Plate	355460-355479	69,100	1957-1960	Beth. Stl. Co. & B&O	From O-65 in 1963	20	3 pc. removable roof
O-67a	Coiled Steel	451040-451139	81,700	1959	Beth. Stl. Co. & B&O	New	100	Corrugated steel covers
O-67b	Bar Steel	451140-451189	74,500	1959	Beth. Stl. Co. & B&O	New	50	3 pc. roof, 4 adj. bulkheads
O-67c	Tin Plate	451190-451199	65,300	1959	Beth. Stl. Co. & B&O	New	10	3 piece roof
O-67d	Pipe	451000-451039	N/A	1959	Beth. Stl. Co. & B&O	1964	14	Bulkheads added for pipe
O-90a	Bar Steel	362000-362199	85,000	1964	Beth. Stl. Co. & B&O	Built new	200	3 pc. roof, 3 adj. bulkheads

The O-63d's list a length of 52'6" over the end sills and an extreme width of 10' 4-1/8". Strangely, the inside length is also listed at 52'6", so there is obviously an error in the diagram sheet. The cars carry two coil covers 22' long by 6' 8-1/8" wide. Trucks are listed as B&O Type 51-x.

The B&O was the largest buyer of the Bethlehem gondola design. In addition to the O-63, it also rostered 4000 O-59 and O-59a's. Refer to the Sunshine kit's history sheet for information on this class.



The Model

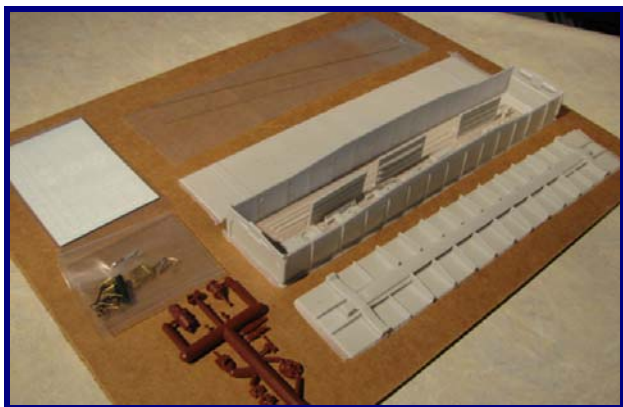
Those who prefer to model the O-59a should proceed according to the Sunshine kit instructions. Those who wish to build the O-63 or O-63d should read on.

The major modifications I made to the original kit were the substitution of a fixed end and related brake wheel assembly for the kit-supplied end, the addition of two tie-down clips to each side panel, addition of stiffeners to the top side chord, and elimination of the Duryea underframe details. The coil covers are scratch built from styrene stock.

There is some question as to whether these cars were equipped with steel or wood floors. My kit came with a steel floor and I elected to build the car that way. (C&O/B&O 1970 diagram confirms O-63d 1/4" plate steel floor, *ed*) Another unresolved question is that of the details relating to the coil cover guides. I elected to roughly follow the outline presented on the diagram sheet as this detail is somewhat hidden by the car sides and the cover assembly. I did not include underbody detail as my roster is built with the intent to operate and my cars are normally viewed from the top or side. I, therefore, skimp on underbody details if they cannot be seen in a side view.

Basic Body Construction

Beyond these changes, I followed the kit instructions in building the basic carbody. I usually start a resin kit by washing the kit components in warm soapy water prior to any deflashing or part separation work. This is to remove any residual mold release agents left from the molding process. I use liquid dish washing detergent and a soft toothbrush. This operation is followed by a rinse with fresh water, then a drying period on a towel. This preparation process is necessary to insure adequate paint adhesion and flow-out when finishing the model. It is especially important if you plan to use a water based paint as a basecoat.

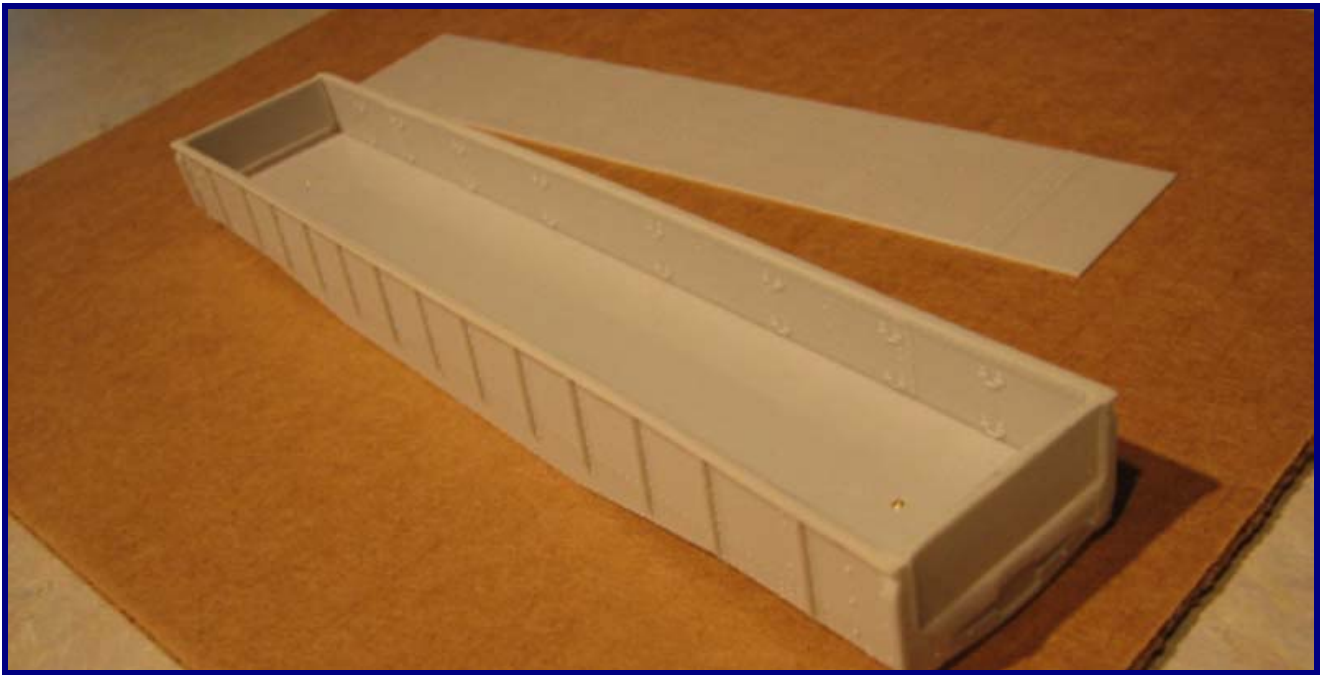


I next separated and removed all flash from the body, floor and underframe castings. Take particular care in fitting the floor and underframe inside the body casting. A good fit here is crucial to the finished appearance of the car. I usually find that the floor components in resin kits are slightly oversize and excess material must be removed to prevent warping of the sides of the car. Spend extra time here to get a proper fit! It will be necessary to assemble the body and underframe before modifying the car ends, as this will reinforce the assembly so that it can better withstand the stresses of the process.

Before installing the underframe, drill the kingpin holes. Start the hole with a #61 drill then enlarge the hole to #50 size to accept a #2 screw. The urethane resin will accept tapping operations very well, but I elected to use a #2 x 1/4" sheet metal screw rather than a machine screw. Also, in preparation for mounting Kadee coupler boxes, remove the center sill extension and lengthwise ribs beyond the bolsters toward the car end. I used an Xacto saw blade to start the process and finished with a #4 chisel blade. The coupler pad was then sanded to a smooth surface. The coupler box will be installed later.

The model comes with internal stake pockets molded to the inside of the car. I have no information as to whether the O-63 class was so equipped and, if so, whether they were retained in the O-63d conversion. I have some doubt that these cars had internal stake pockets but lacking solid data, I elected to retain this detail. Further, I did not want to chance damaging the surrounding rivet detail in the removal process. The interior detail on these kits is very nicely done.

Next, cement the underframe in place by roughly fitting it into the carbody. You should have a good friction fit that does not force the car sides into a bow. Inspect the carbody for any deformities and, if any are present, remove additional material from the underframe where necessary. Adjust the alignment of the underframe by holding the assembly up to a bright light and observing the floor line through the translucency of the car sides. Begin the gluing process at the bolsters after assuring the bolster ends align with the bottom of the car sides. Use a CA adhesive to just tack the bolsters in place, then move to the center of the car and align and tack the assembly there using the shadow technique to assure the underframe is even with the rivet line on the exterior of the sides.



The underframe should fit below the stake brackets cast into the interior car sides. Once the carbody and underframe are satisfactorily aligned, run CA cement along all joints to assure a tight assembly. Be sure to bond the ends of the cross bearers to the sides as they are fragile and could easily be broken.

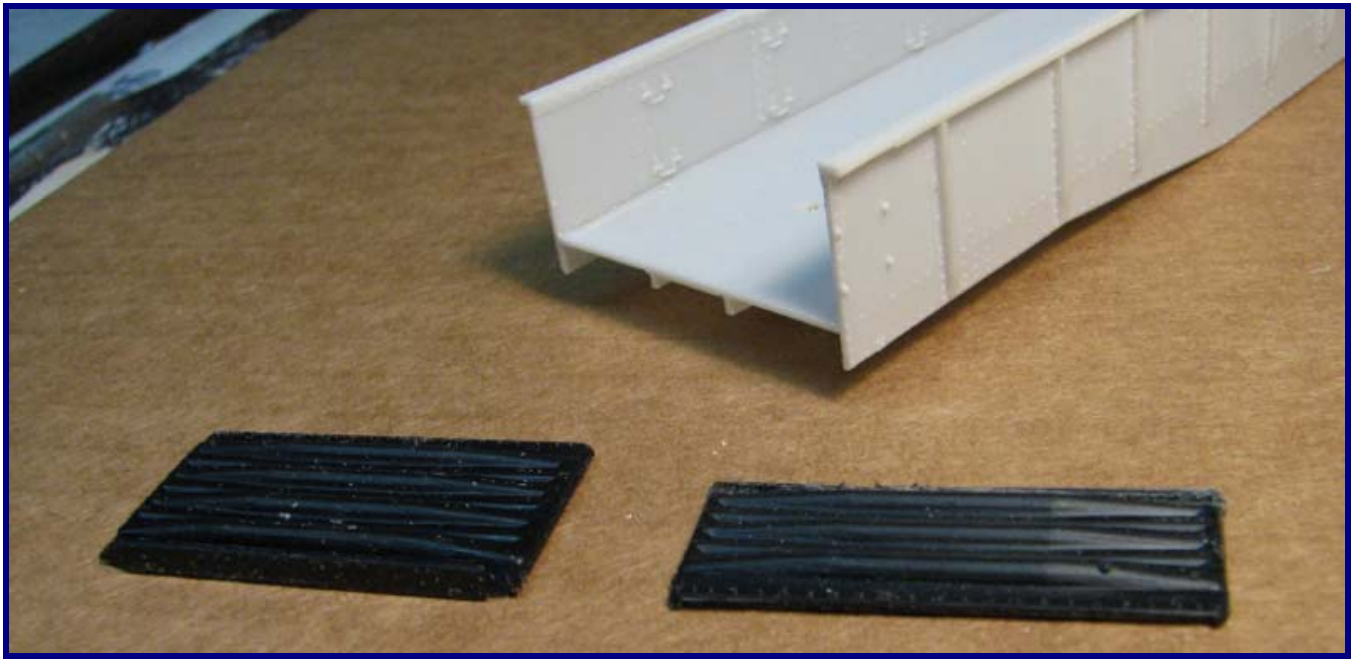
The floor should be fitted similarly inside the carbody but not glued in place at this time as we will first modify the ends and fit the coupler boxes.

Next, we will begin the required modifications to the carbody. Proceed by taping a sheet of 100 grit sandpaper to your workbench or other flat surface. Be sure that the side-to-underframe joint is solid. If not, run additional ACC into the joint and allow it to set. Now stand the car body on end with the A end flat against the sandpaper. Carefully keep the carbody perpendicular to the sandpaper while sanding in a circular motion and work slowly as the sandpaper will cut through the resin rather quickly. Sand the end until the extreme end side rib is removed. This operation will also remove the end sill and cast temporary end. Take your time here to be sure that you maintain the car body in a vertical position so that only the rib is removed from the side and that the floor is flush with the sides. There are bolt heads cast on the sides for mounting the side grab irons and the objectives are to remove all of the rib without touching this detail and to maintain the squareness of the end. Stop the sanding process as you reach the bolt heads but remove the vertical rivet row at the

ends of the car sides. We will make new rivet strips later.

Treat the B end in a similar manner after first removing the handbrake housing bracket with a # 11 knife blade.

I used a Detail Associates # 6221 gondola end as the replacement end as it has the proper rib pattern while maintaining the inside profile. However, this part is designed for a tall GS-type gondola and the uppermost major rib must be removed to give us the three rib pattern we need. Use a fine-toothed Zona saw to shorten the end. Make this cut just even with the bottom of the top major rib. File the inside of the end so as to assure a tight, flat fit around the perimeter of the floor and sides and to remove any burrs remaining from the saw cut. Note that there is a small inner ridge across the bottom of the end that interferes with the alignment and this must also be removed. Also file the bottom of the Detail Associates end just below the line of rivets so that you have a straight bottom edge. Finally, sand the ends slightly so that they match the width of the outside of the carbody. Sand a radius into the outside of the end casting so that the end seam will better blend into the sides of the car. Also, trim the height of the ends so that, when fitted in place, the top will align with the bottom of the top chord on the sides. We will modify the ends further after they are affixed.



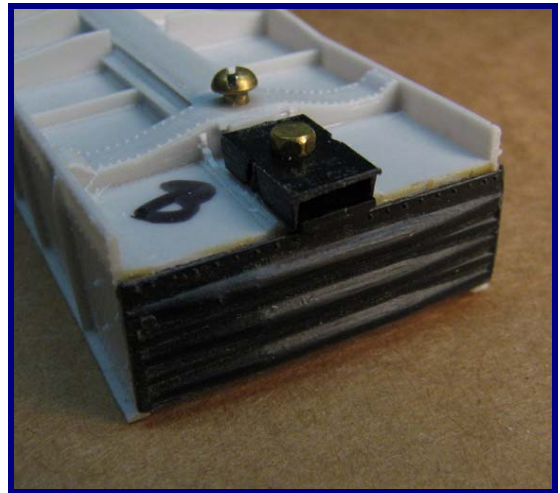
Place the ends by tacking them in place with PlioBond cement. Align the line of rivets across the bottom of the end casting so that they are in line with the rivet row at the bottom of the car sides. The PlioBond has a slow set time which will allow a few minutes to get these parts aligned properly. Once the parts are aligned, complete the glue joint with an application of ACC cement.

It is problematic to mount couplers to a gondola car possessing a thin profile floor unless you settle for a glue joint. As my car will be used in operations, I felt it was necessary to use a secure screw mount and live with the screw end visible flush with the car floor. In this case, it will be less visible once the coil cradle and covers are in place. Begin, then, by gluing the top half of a Kadee # 5 coupler box to the centerline of the floor after removing the mounting ears. Next, drill # 53 through the center mounting hole, then tap for a 1-72 screw. I used a 1-72 x1/4" brass flat head screw to secure the top half of the Kadee box, again removing the mounting ears. Trim the screw to length so that it is flush with the interior car floor.

It will be necessary to grind approximately one thread from the end of the screw to keep the screw tip even with the surface of the floor. Adjust this process accordingly if you are using a different coupler box.

The bolster is deep enough to accept a short # 2 sheet metal or machine screw as the kingpin. Test fit the

kingpin screw at this time to be sure that it will not penetrate into the floor casting.



Trim the inner floor casting so that it will fit snugly inside the body. Test fit, but do not glue in place, just yet.

Body Detailing

We are now finished with the body modifications and can begin to detail the carbody. Begin by gluing a piece of .015" x .080" Evergreen styrene strip to the edge of the sides at each corner below the end casting. This simulates the end gusset plate and will be the mounting plate for one end of each of the lower end grabs. Cut the strip a little longer than needed to provide a handle when cementing the strip in place. Mount the outer edge flush with the car side

and, once the CA has set, cut the length to match the depth of the car side.

There is an angle riveted to each exterior corner of the car. To represent this, make a rivet strip by running a pounce wheel very close to the edge of a sheet of .005" Evergreen styrene. Once the row of rivets is formed, run a #11 blade along the inside of the rivet row, so that the rivet impressions are centered on the resulting strip. I ended up with a rivet strip .040" wide by about 6" long. Cut this strip to match the height of the sides below the top chord and then glue in place at the extreme edge of the car side. Lay another strip behind this one on the car end so as to form a reinforcing angle at the exterior corner of the car. Do this for each exterior corner of the car and use CA adhesive to make the bond. Finish the angle by trimming it even with the bottom of the car side and end gusset.

Remove the retainer valve from the car side with a sharp chisel blade and sand the remaining surface smooth.

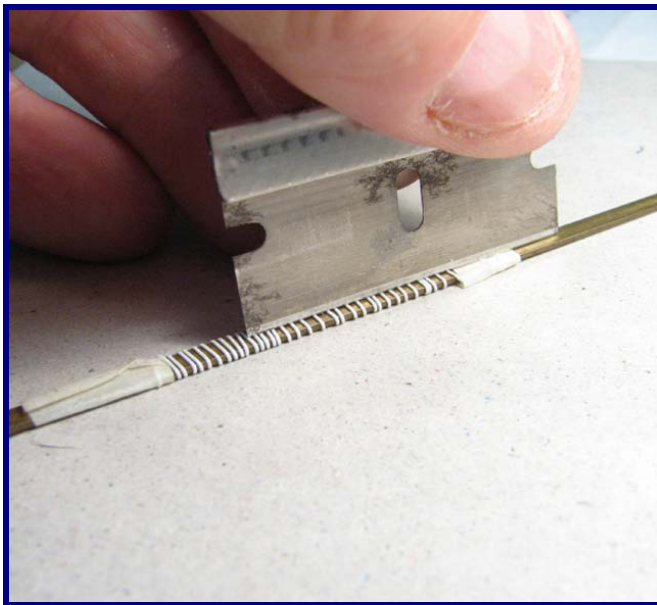
I used a 39' length of Evergreen .060" angle to represent the top chord stiffeners. These were centered on each chord and fastened with CA.

To model the hold down clips, first mark a pencil line across the car side 8" below the top chord, measured at the first side panel from each end. I made the clips using Grandt Line and Plastruct .010" styrene rod following the fabrication technique outlined by Jack Consoli in the December 2004 issue of the Keystone Modeler. (http://www.prrths.com/Keystone%20Modeler/Keystone_Modeler.htm) I used a piece of .094" x 0.30" brass bar rod stock as the winding tool. Tape one end of the plastic rod to the brass rod, then tightly wind the rod around the brass bar to form a spring-like winding.



Once the winding is complete, tape the opposite end of the rod to the bar. The rod will not wrap flatly against the rod due to the memory inherent in the styrene. To get a tight fit against all sides of the bar, I passed a heat gun across each side of the winding until the stress was relieved from the rod and it laid flat against all sides of the bar. This will shape the clips to the square contour we need. I seemed to get tighter windings with sharper corners from the Grandt Line rod, however.

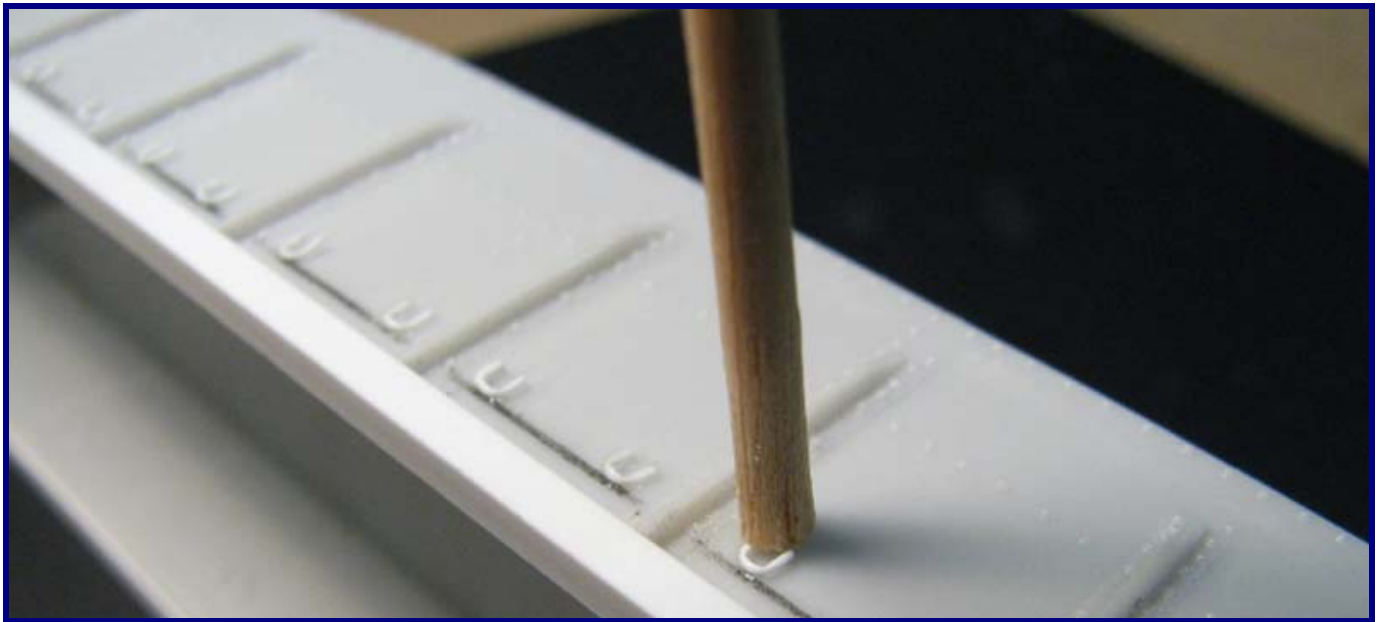
To make the individual clips. I used a razor blade to guillotine the coil at the midpoint, and lengthwise, of both of the .094" sides. You could scribe a line at the center line of each of these sides of the bar to use as a guide. This results in two small square horseshoes of styrene rod per coil that will be used to simulate the hold down clips. One "spring" wrapping will yield many clips, so you can pick the best from the pile to use for this project.



There are two clips per side panel except for the panels closest to the car ends, where one clip was eliminated at the grab iron location. I placed a dot of CA at the pencil line approximately 4" to either side of each side rib and, while the CA is wet, I used a small wood dowel with wetted end to pick up and place the individual clips



Pick up the horseshoe-shaped clip at the open end with the closed end overhanging the edge of the dowel and slide the top of the clip into the dot of CA on the car side. Once set, dab a little CA on the legs of each clip to affix them firmly to the car.



Glue a strip of .010" x .030" Evergreen styrene across the top of the Detail Associates end castings to form the end chord. Align the back of the strip with the inside of the end casting. Now, cut two more pieces of .010" x .030" strip approximately .060" shorter than those above and place them centered on the end chord. The top of the end chord should now align with the top of the side chord with a little notch at each extreme corner of the car. The corner chord tie plate will mount in this notch.



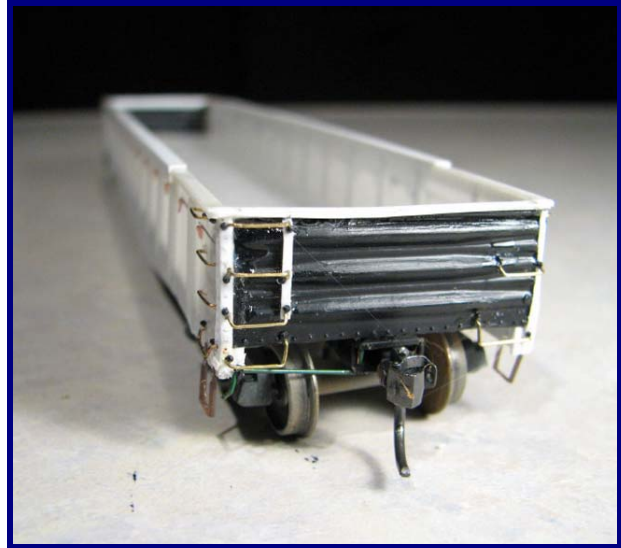
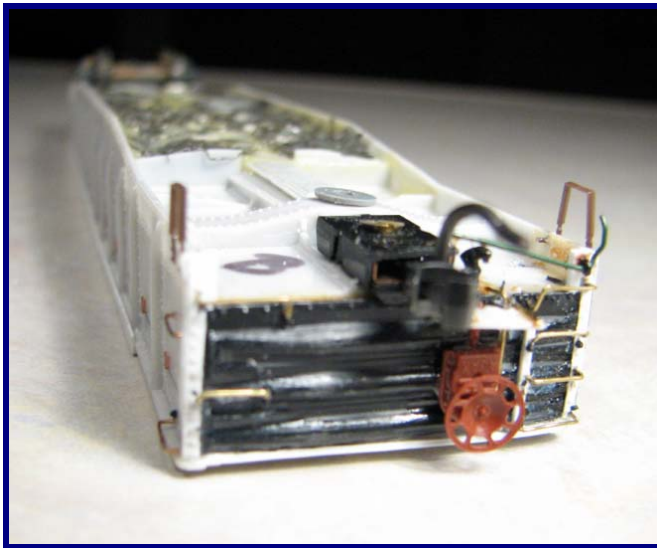
Make the corner tie plate from .010" x .030" strip cut slightly longer than needed to fill the notch. Cement the strip into the notch using CA. Once the glue has set, trim the excess from the strip and sand a radius into the extreme corner edge to complete the corner chord tie plate.

I tacked the floor casting into the carbody by randomly applying several small dots of Plibond cement to the floor and then pressing the casting in place. You could place a weight between the two floor sections but I elected to pack lead wool between the cross members on the underbody casting. The fishbelly sides will hide this and the lack of underbody detail. You could also place the car weight under the coil covers but I prefer to keep the center of gravity as low as possible. My preference is to weight my freight cars to approximately 100 grams, regardless of length. I feel that today's free rolling trucks and improved wheelsets allow us to run cars lighter than the NMRA RP guidelines. I would rather trade the extra weight for a few more cars in the train.

To define the "B" end, mount a retainer valve casting (I used a Tichy part) 22" from the left edge of one end of the car and centered on the top rib.

The right leg of the end grabs mount on a Styrene strip to form sort of a half-ladder. To duplicate this, cut a strip of .015" x .030" to a length of 2'6" for each end. Mount this directly under the end top chord and parallel to the left edge of the end. Space the strip so that the legs of an 18" grab iron will be centered on the strip and the riveted corner angle placed earlier. I used Testor's plastic cement so that I would have some time to properly align the strips on the 18" centers.

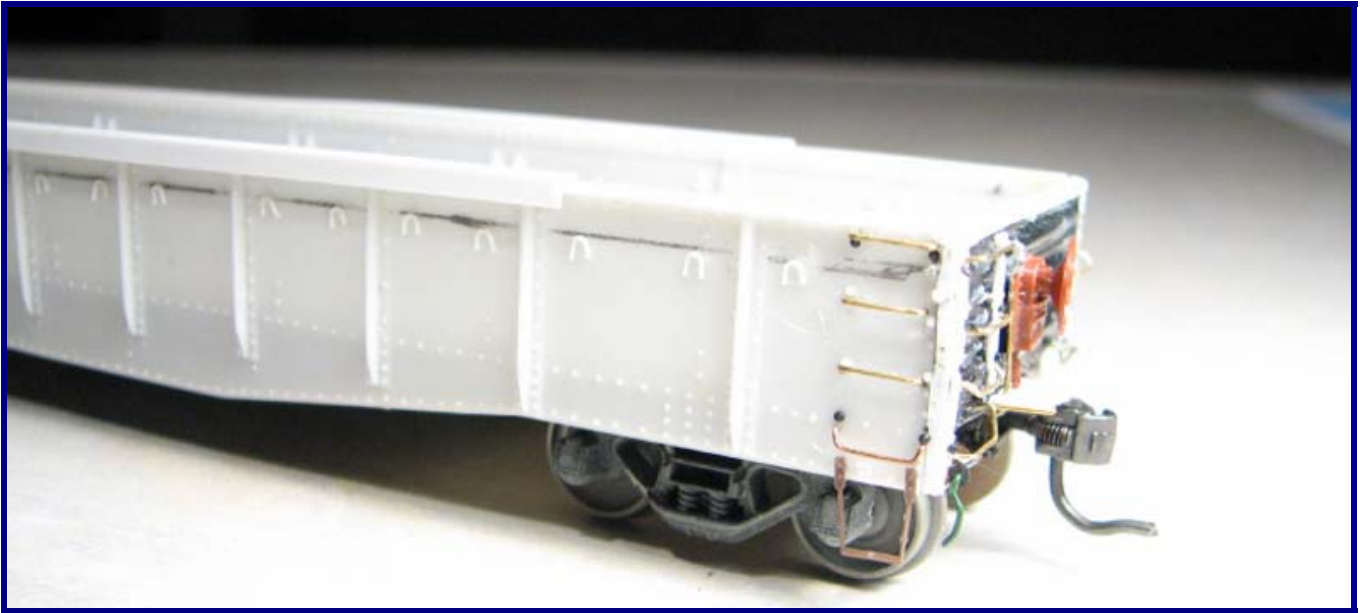
Once these strips have set, we can mount the end grabs, using the wire parts supplied with the kit. The top two grabs are straight, the third grab, from the top, is a drop grab and the bottom grab is a combination, with a straight leg to the outside of the car and a drop leg to the center of the car. This grab is formed from a length of .012" wire. The lower right grab is a mirror image of this grab. The outside leg of these grabs mount on the outside bottom end gusset and both should be 18" in length. The rungs should be 14" apart once the grabs are set. The top grab should nestle close to the underside of the top chord. The right upper end grab is a straight 18" grab mounted on the centerline of the center dreadnaught rib so that one leg mounts on the corner rivet strip. Use the photos as a guide.



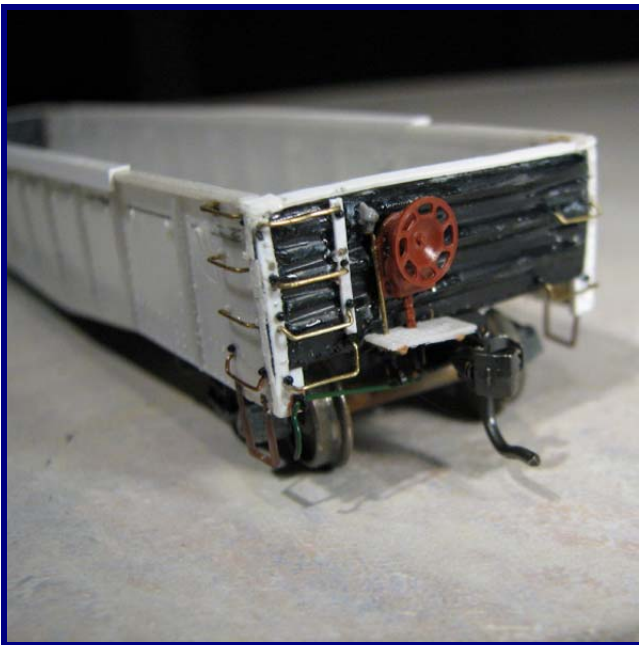
You can use the grab boltheads cast on the side as a placement guide except for the lower right side grab which will be a drop grab. Its legs will mount on the floor rivet line cast along the car side. Remove the cast bolt heads for this grab and also those for the upper left side grab. The upper grab iron location for the left side will be changed. It will be placed directly under the top chord as on the right side of car. The second (bottom) left side grab will be mounted in the location of the cast lower grab boltheads. Drill #79 for all grab holes and lock in place with a drop of CA. Flush cut any legs that protrude through the inside of the car ends.

Next, drill #77 for inserting Grandt #5100 NBW castings. The NBW's on the ends should be placed directly above the wire grabs except for the top rung of the half-ladder. The bolts go below this grab. On the sides, the upper left

and right wire grabs have the bolts in the below position, while the lower (drop) grab on the right side will have the bolt heads in the upper position. Follow the photos for the correct location of all of this grab iron work.



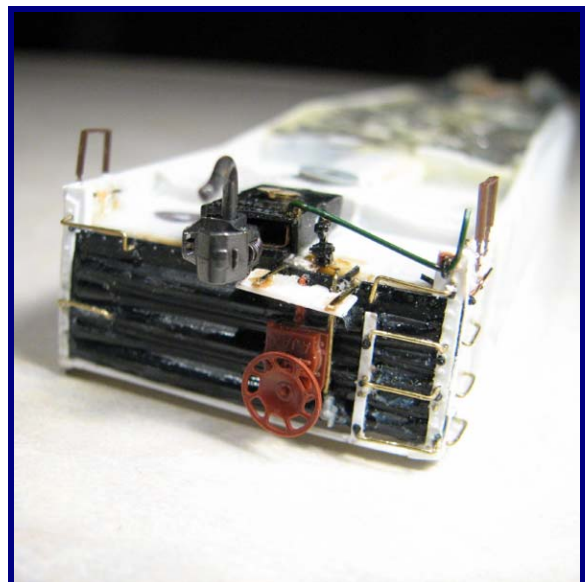
On the “B” end, drill a #79 hole below the retainer valve outlet and run a piece of .010” straight wire from this hole to the bottom of the car end. Bend the wire 90° at the hole below the retainer and against the car floor and tack the ends of the wire in place with CA.



On the left hand bottom end gussets, drill #74 midway and centered below the bottom grab and the bottom of the gusset. Place a Tichy #3037 eye bolt into this hole and secure with a drop of Pluobond

cement placed on the mounting shaft. These eye bolts will be used to mount the outer ends of the cut levers.

I have no information on the correct brake wheel and housing to use on the O-63d, so I used the Bowser brake wheel housing casting supplied in the kit. This was mounted to the B end with solvent cement after cutting off the mounting lug. . A Kadee #2033 Universal brake wheel was mounted to the housing after reaming out the mounting hole with a # 55 drill. Install a Tichy bell crank directly below the chain and connect the brake chain and crank with a short piece of .012” wire, fastened with CA.



Next mount the trucks. The diagram sheet indicates that 51-X trucks were used under these cars. I do not have information as to what HO trucks, if any, represent this prototype. Also, the car has rather deep side sills, so all of my reference photos show the trucks in deep shadow. All I can tell is that some form of a "Bettendorf" truck was used. I chose to use a pair of Stewart trucks with metal wheelsets installed. As the trucks are very close to the floor, I found it necessary to shave a bit off the end cross bearers in order to clear the wheelsets as the car rounds a curve.

Detail Associates #SS6415 straight side-mount stirrups match those on the prototype. Drill #76 and space the holes per the Detail Associates template to mount these below the side grab irons. Fix in place with CA.

To the right of the coupler box, mount the air hoses and brackets included with the Sunshine kit. I chose to delete this detail as these are extremely vulnerable to damage during regular operations.

To complete the car body, fabricate cut levers from .016" wire. Drill a #73 hole at the top right of the coupler box cover as an anchor point for the lever. Thread the lever through the Tichy eye bolts we mounted earlier, then bend the end of the lever 90° upward and trim so as to just fit into the coupler box. Fix the cut lever in place at this end with a small drop of Pliobond.

Fabricate the four towing staples from .010" brass wire by wrapping the wire around a drill bit or brass rodding to form a "U". Drill a #79 or #80 hole next to the insides of the first and third rivets along the

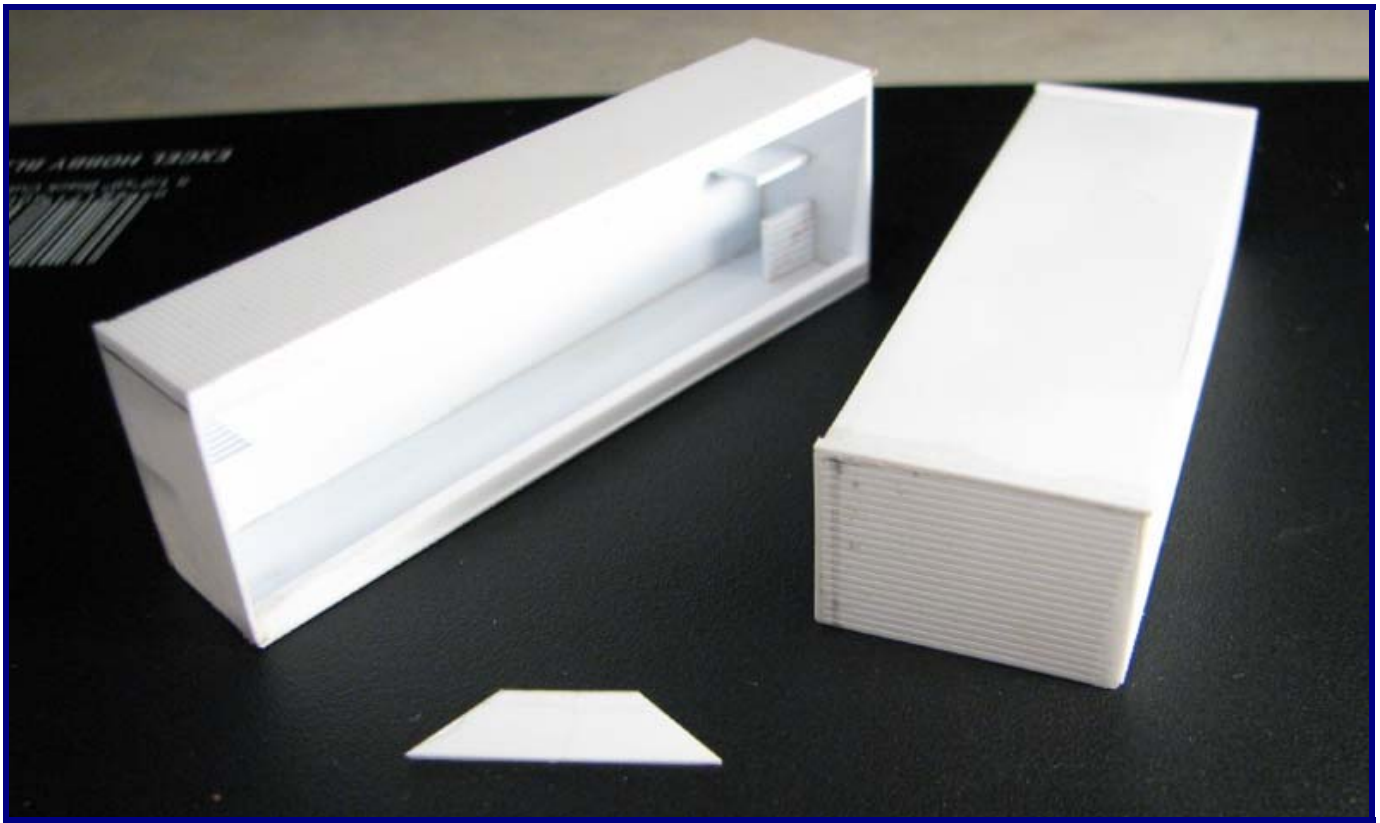
bottom sill to the side of the first and last posts that face the car end. Run the ends of the "U" into these holes and fix with CA. Place a small tack board 3" above each left hand towing staple and 2" to the left of the first side rib on the left of the car side.. I used a small tack board, cut in half, that was left over from some long-forgotten plastic boxcar kit project, however a 4"L x 8"H x 2" strip of styrene, affixed with CA, will do.

This finishes the gondola and we can now move to the coil cover and cradle assemblies.

Coil Covers

Begin building the two coil covers by cutting four pieces of Evergreen #2030 V-Groove siding, .020" thick x .030" grooves, 22' long by 4'6" high. These will be the side pieces and should be cut with the grooves running vertically. Be sure your cuts are square and true. Next cut four end pieces 4'6" high by 6'3" wide but this time cut with the grooves running horizontally. Again, check for square.

Next build the basic box by joining a side and end. Place the edge of the end against the inside edge of the side. Square the assembly and secure with solvent cement. Use solvent cement for the entire coil cover assembly unless noted otherwise. Make four of these end/side assemblies and, once the cement has set, glue two pairs together to make two oblong boxes. From a sheet of Evergreen #9040, .040" plain sheet styrene, cut two rectangles 21'3" x 6'0", or to fit inside the boxes just fabricated. Glue flush with the inside edges to form the top of the boxes. Reinforce the length of the inside of the sides, at the bottom, with strips of Evergreen #180, .080" square stock. Use scraps of .040" to reinforce the ends as necessary to keep square.

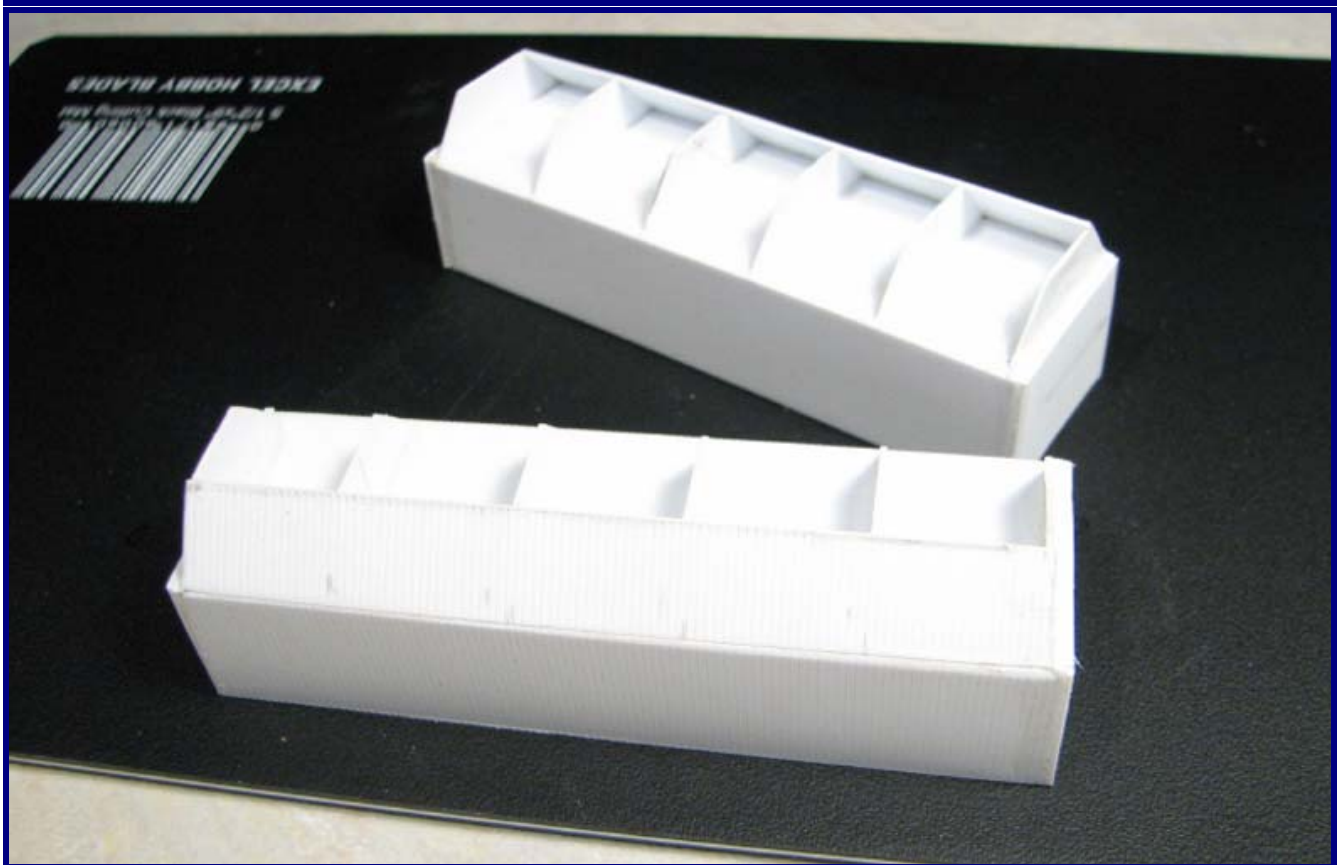
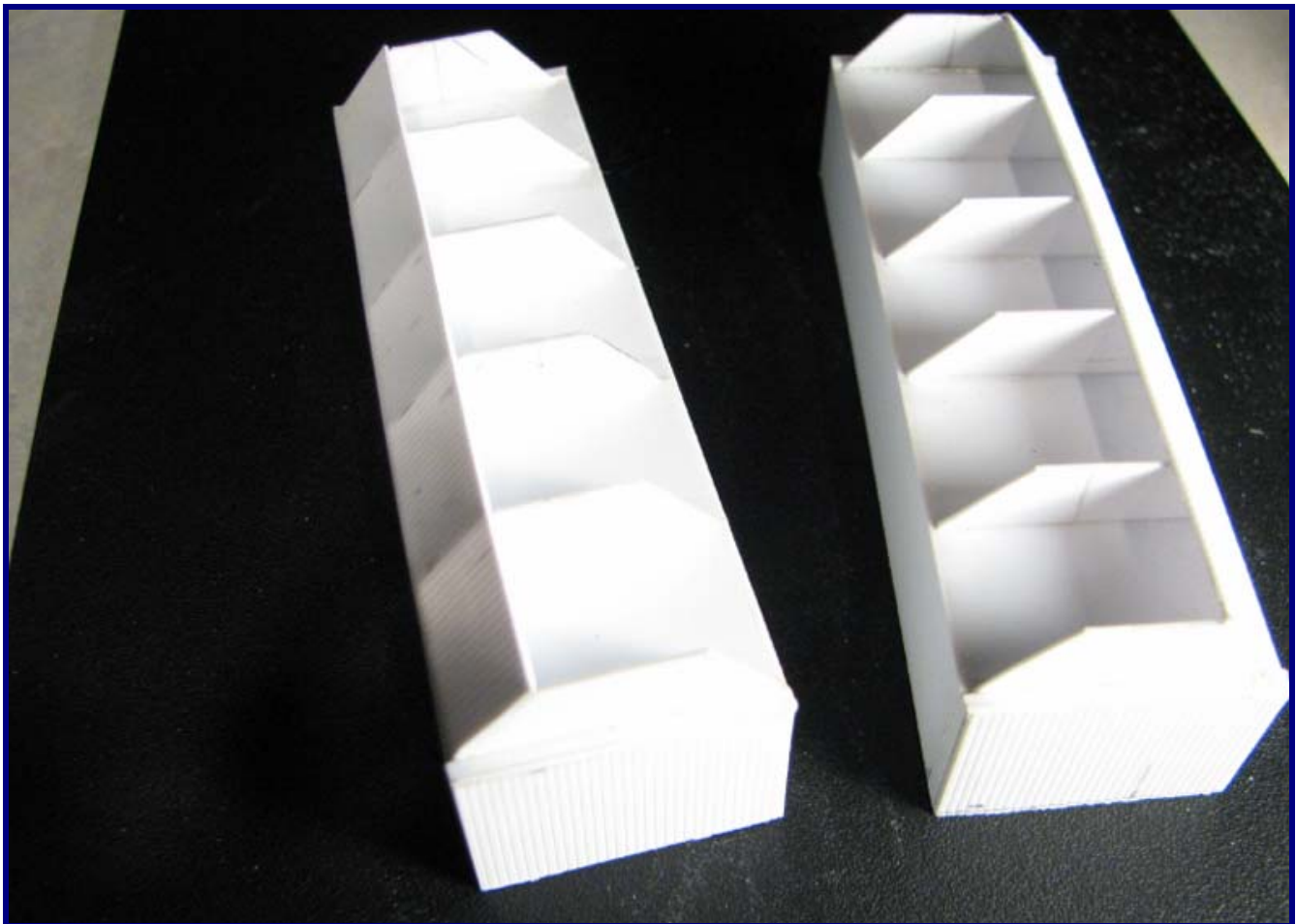


Finally, glue a strip of Evergreen #8206, 2" x 6" strip across the top edge of each end and cut the ends to be flush with the sides of the boxes. This completes the basic bottom box for each of the coil covers.

The top is essentially a trapezoidal box centered atop the rectangular bottom box. Begin by carefully laying out a trapezoid from Evergreen #9020 plain .020" sheet. Lay out the base line 6'10" long along an edge of the sheet and mark the end points. Find the center line, 3'5" from each end and draw a center line 90° from the base line. Find 3'7" along the center line above the base and draw a line from this mark to each end mark of the base line to form a triangle. Measure 23" up from the base line along the center line. Through this mark, draw a line parallel to (23" above) the base line and through the sides of the triangle to form the basic trapezoid we will use. Carefully cut the trapezoid from the sheet and use it as a template to make eleven additional identical

shapes. These will be the bulkheads used to form the upper half of the coil cover boxes.

Begin fabrication of the upper boxes by gluing one trapezoidal bulkhead behind each of the 2"6" pieces attached earlier across the tops of the ends. Be sure these are in a vertical position. Now, fabricate a rectangular piece of v-groove siding to span between each of the end bulkheads. The edges will be glued atop the outside edges of the end bulkheads and the base will lie along the top edge of the bottom coil cover box. Cut this piece so that the grooves will align with the grooves in the bottom box. Sand the bottom edge to a 45° angle and cut the top edge to be flush with the top of the slope of the trapezoidal bulkheads. When satisfied with the fit, glue in place to the bulkheads and the top edge of the bottom box minimizing the horizontal seam as much as possible. All horizontal edges should be parallel.



Next, make four equidistant marks across the sloping side sheet. They should end up about 4' 3" apart. It is important to make sure they are spaced equally across this sheet. On the opposite (inside) of the sheet, place a trapezoidal bulkhead behind each mark and glue to the top of the bottom box and the slope sheet.

Lay out the opposite side sheets as per above and place. Assure that all glue joints are free of gaps. File and sand the end bulkheads so as to remove all traces of joints. Fill with body putty, if necessary. Be sure to maintain the four equidistant marks along the slope sheet.

Turn the coil covers upside down and draw them across a piece of sandpaper affixed to a flat surface. Sand until the bulkheads and top edges of the slope sheets are perfectly flat and will support the coil cover top at all mating joints.

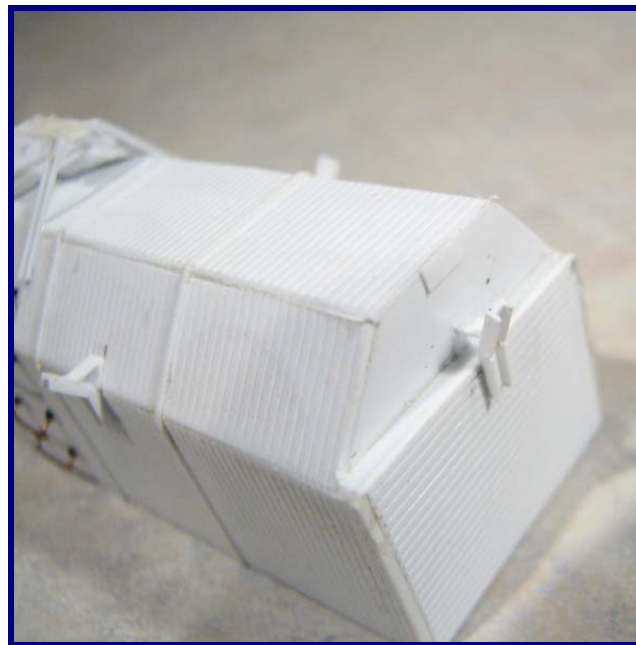
Lay out the tops of the covers on a piece of .020" thick v-groove sheet by using the remaining opening of the covers as a dimensional guide. The bottoms of the top sheets should match the outer perimeter of the slope sheet/end bulkhead and the v-grooves should run as those on the sides. Cement in place over the bulkheads and side sheets, again assuring that no gaps are present around the perimeter. Once the cement has thoroughly set, sand the ends so that no gaps show. Carefully file and/or sand the edges of the top sheets to match the angle of the slope sheets, again avoiding gaps in the seam.

My photos show what appear to be raised seams along the hoods, dividing them into five sections. Use the equidistant marks we placed earlier and cement a strip of 1" x 2" styrene at each mark. Run this strip from the bottom of the cover up, over the slope sheets, top and down the opposite side. Repeat for the other seams on each coil cover to divide the covers into five equal length segments.

Next, build the nesting brackets from Evergreen .060" channel. These are centered on the cover ends and centered on cover segments 2 and 4 at the seam line between the side and slope sheets. To make each bracket, lay the channel on its flat side, make marks at 12" and 24" along the channel. At the 12" mark, cut a narrow V-shaped notch into the channel flanges. Bend the channel at this point up to an approximate 30° angle and glue to hold this angle. Make six brackets for each coil cover. Place these on the cover with flat side of the channel against the hood and the

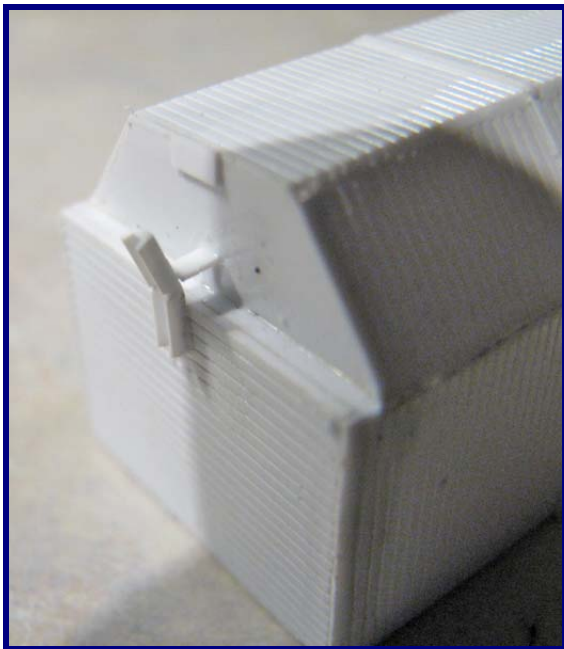
bend 4" above the side seam of the cover. These should be centered on cover segments 2 and 4. The two remaining brackets are centered on the ends of the cover with the joint 2" above the top of the 2" x 6" shelf.

A brace is placed behind each bracket. This is made from a short length of .010" x .060" styrene strip. One end of the brace mounts just above the bend in the side mounted stacking bracket and the other end is attached to the upper coil cover. This brace should be horizontal. I found it easier to eye-ball the length of the brace, as the angle of each bracket tends to vary slightly. It is also helpful to place a small block of .010" x .060" strip against the side of the cover to serve as a support for one end of the brace. Use Testor's Cement for Plastics for this brace as the slower set-time will allow more time to position this small piece

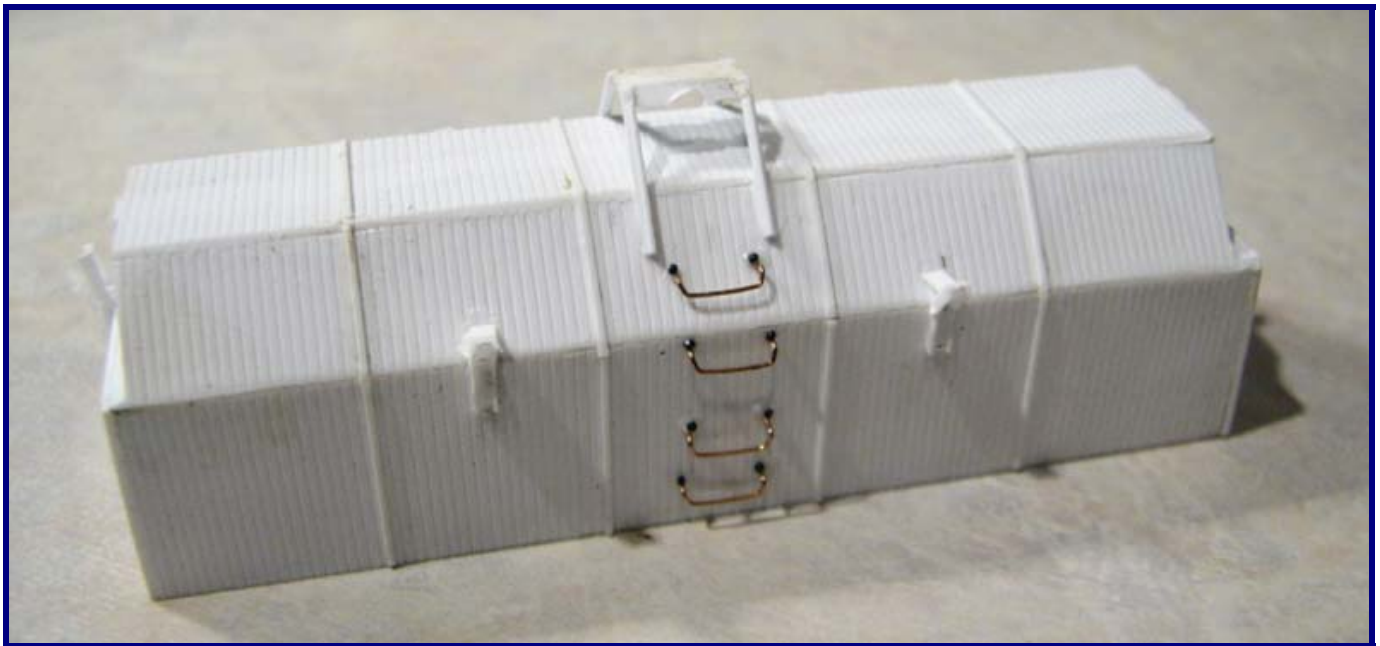


On the end brackets, one end of the brace merely attaches to the end bulkhead, while the opposite end attaches to the bracket.

My reference photos show a small protrusion at the top of the end bulkheads. I simulated this with a strip of 2" x 4" styrene cut to a 12" length. Mount these pieces centered horizontally and even with the top of the end bulkhead.



Mount four 18" drop grabs on one side of each cover. These are centered on the center coil cover segment and three are spaced 18" apart on the side sheet, beginning 2" below the seam. The remaining grab mounts on the slope sheet 18" above the seam. Use CA to affix the grabs, then drill a hole above each leg and place an NBW casting.

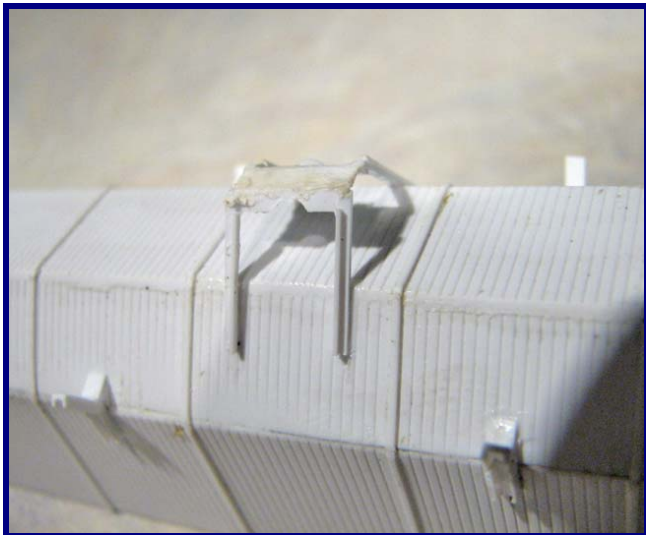


The lifting bracket is centered on each coil cover and is shaped something like a coffee table with sloped legs. Begin building one by taking two 3' lengths of .010" x .030" styrene strip and laying them on a flat surface spaced 2' 2" apart and parallel to each other. Connect one end of each with a strip of .010" x .080" x 2' 6" to form a square U-shaped piece. The .010" x .030"s should lay atop the ends of the .010" x .080" to form the joint. Glue in place. Trim the legs to equal lengths of 3'. Make a total of four of these assemblies. Place a strip of .010" x .020" strip atop the inside edge of each .010" x .030" to form a 90° angle. Once set, cut each of these .010" x .120" webs

back 3" from the end at the joint with the .010" x .080".

Begin forming the "table" by joining another strip of .010" x .080" x 2' 6" along the length of the first .010" x .080", then joining another U-assembly to the opposite edge to form the table-shaped bracket. Use Testor's Cement for Plastics for these joints and, before the assembly sets, stand the "table" on edge and spread the legs out to an angle of approximately 135° from the level top. This is so the "table" will straddle the slope sheets on the cover. Make two such assemblies. Before the glue hardens completely, fit

the bracket over the top center of the coil cover so that two legs are centered about the top grab iron and that all legs lay flat on the slope sheets. Once all is in alignment, the flat top of the bracket should be parallel with the top of the cover and riding 18" above it. Glue in place once you are satisfied with the final alignment.



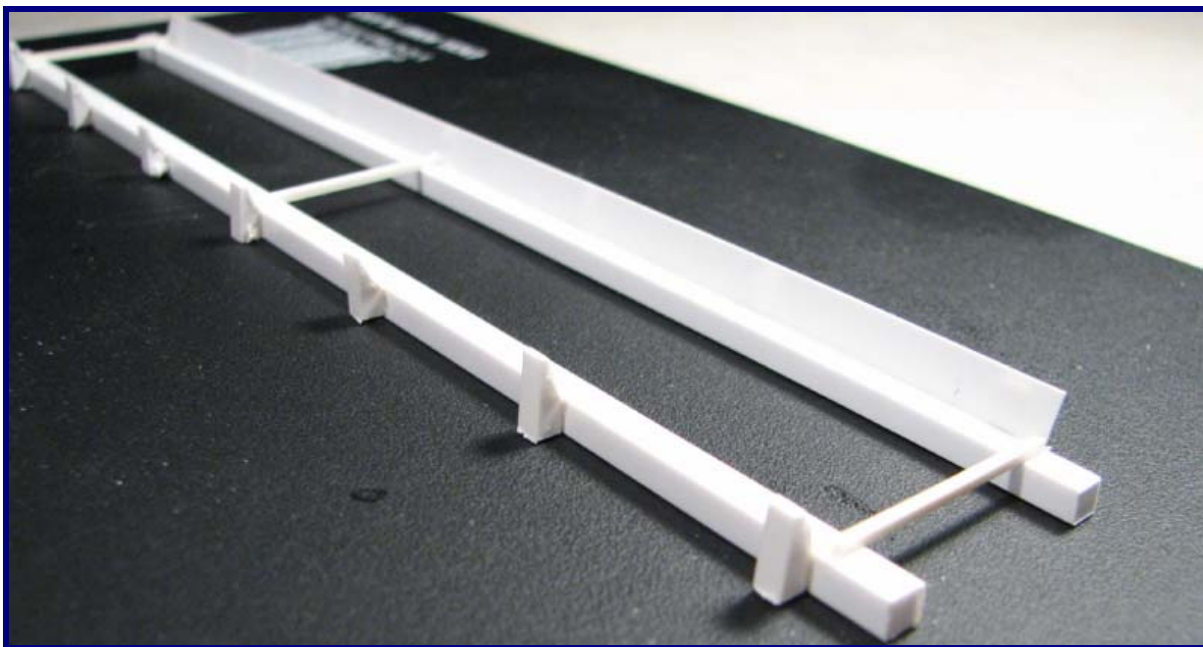
Once all glue joints are set, sand the top of each bracket to hide all joints. Use body filler to fill any gaps. Be sure all leg angles terminate below the top of the brackets. Stand the coil cover upside-down with the top of the bracket resting on a hard, flat surface. At the center of each bracket side panel, using a small round file, file a semi-circular notch to simulate the notch for the lifting bar. Be sure the

notches are in alignment across the bracket. This completes the construction of the coil covers.

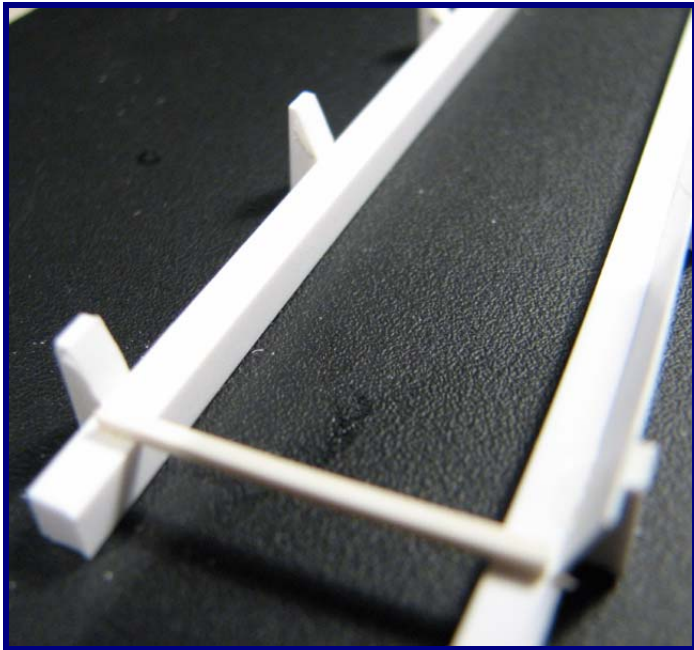
Coil/Coil Cover Cradle

The hood and coil cradle(s) are somewhat of a mystery. The only photo I have of this assembly is too dark to be of much value. It does seem to show a somewhat different assembly than is shown on the equipment diagram sheet which shows the covers mounting in a fixed position. However, I have a broadside photo of two cars which clearly show the covers spaced randomly along the length of the cars. So, it would appear that some "imagineering" must be done here by combining information from both sources.

The diagram sheet shows the major component of the cover cradle to be a pair of 12" x 12" timbers running the length of the car. Use two strips of .125" x .125" styrene strip to simulate these timbers. Cut them to length to fit the inside length of the car. Space the outside edges 6' 6" apart and tie them together with 4" x 4" strips placed at the center and ends of the timbers. Next, use .100" x .100" styrene strip to fabricate braces for the sloping cradle sides. Begin by sanding a 60° angle bevel on one side of the strip so that the slope runs along the length of the strip and leaves a .020" flat at the top of the bevel. Cut the strip .125" below the bottom edge of the bevel to form the brace. Make twelve of these braces and space them equally along the length of the timbers, fastening them with the .125" face against the timber and the bevel facing to the inside of the car. This forms the basic shape of the cradle.



To finish the cradle glue a .010" x .188" styrene strip along the slops of the braces. Trim the length of this strip to fall slightly short of the ends of the timbers.



The cradle may now be placed inside the car. Test fit the coil covers. They should fit within the slope sheets and rest flat on the timbers. I found that the cradle fits snugly within the carbody, so I did not glue it in place. However, it may be glued with several dots of Pliobond, if necessary.

This completes the assembly of the car and it is now ready for the finishing processes.

Finishing

The entire car is painted black and you may finish the model with the paint of your choice. If using a water-based paint, however, be sure to wash the car with mild soapy water or Isopropyl alcohol to remove any residual surface contamination from the molding and assembly processes. I painted the entire car and coil cover assemblies with Scalecoat II Loco Black. I then allowed this to dry for a week before beginning decal work.

The decals were applied directly to the Scalecoat, then sealed with a coat of Floquil Crystal-Cote. Once this was dry, a coat of Testor's Dullcote was applied. The decals were a mix of decals from the Sunshine O-59a kit and left-overs from a number of Champ sets and decals from other resin kits. The chalk mark decals are from Sunshine. Some of the lettering is still incomplete as I could not find proper alphabet letters to spell out the word "insulated" on the coil cover ends.

I weathered the car by lightly airbrushing Floquil Grimy Black and Grime over the car and followed this by detail weathering with chalks and a Conte' crayon. Finally a small square of paper was fastened to the tack boards with rubber cement.



Conclusion

It is my hope that this article will spur interest in these distinctive cars and that additional information on them will surface as well. They were a transitional development that, fortunately for the modeler, fits very well into the steam-to-diesel era. They did not last very long but they quickly led to the development of more sophisticated coil-carrying cars. It is now possible to build a reasonable model of these cars rather than having to settle for stand-in versions or resorting to a very serious scratch-building project.

Parts List

Sunshine Models, Box 4997, Springfield MO 65808-4997 (*Note: Mail order only, usually requires long lead time, but supplier is very reliable.*)

Kit # 70.4 B&O O-59a 52' Bethlehem Gondola
E.8 Chalk mark decals for Northeastern roads
E.6 Chalk mark decals for Southeastern roads

Detail Associates

#6221 G.S. Gondola Ends, dreadnaught
#2522 Flat brass bar, .010" x .018

Grandt Line

#5100 NBW castings

Plastruct

#90850 .010" Styrene rod

Tichy

#3015 18" Drop grabs
#3037 Eye bolts

Evergreen

#100 .010" X .020" Strip
#103 .010" x .060" Strip

#108 .010" x .188" Strip

#175 .100" x .100" Strip

#180 .080" X .080" Strip

#186 .125" x .125" Strip

#261 .060" Channel

#291 .060" Angle

#2030 V-Groove siding .020" x .030" groove

#8206 HO 2" x 6" Strip

#8404 HO 4" x 4" Strip

#9020 .020" Plain sheet

9040 .040" Plain sheet

Kadee

#58 Couplers

2033 Universal brake wheel

Stewart (Bowser)

"Bettendorf" Trucks

Miscellaneous

CA Cement

Pliobond or Goo cement

MEK or other solvent cement

Material for car weight

References

Sunshine Models: *Prototype reference sheet #70A Bethlehem Design Fixed End 52' 6" Gondolas.*

Jack Consoli: *Keystone Modeler*, issue#17, December, 1994. *PRR Gondolas – Part 12, the G31c and e.*

5403, January 1981, pg. 7 article: *B&O Liked 52', 13-Post Gondola Design*

B&O 1969 Sales Manual: *Coil Steel Gondola.*

Stephan R. Heath: *Scale Coupler*, July/August 1989, Pg. 14: *B&O Coil Gondola*

B&O Equipment Diagrams for Classes O-59, O-59a, O-63d and O-63e.

Photo References: Howard Ameling photos of B&O O-63d's 351086 and 351159.

Electric Railroader's Association photo CD: *Pennsylvania Trolleys Part 2.* Background views of cars 451086, 451105 and partial view of additional car.

Acknowledgements

Gregory M. LaRocca, Howard Ameling, and Jim Mischke



O-63d #351159 at South Webster, Ohio on August 9, 1959. Photograph by Howard Ameling.



O-63d #351086 at South Webster, Ohio on August 9, 1959. Photograph by Howard Ameling.

HO SCALE A-17 COACH

BY BRUCE ELLIOTT

PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.

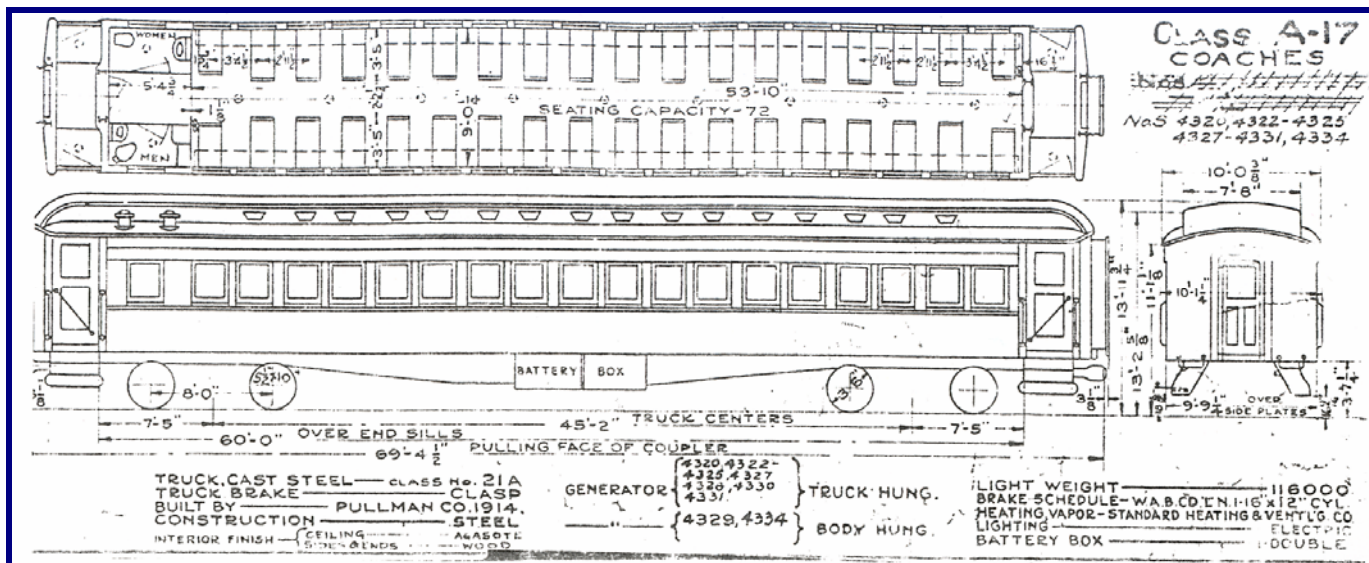


John Teichmoeller photograph.

Prototype

One day, while looking through old B&O photographs that my father had taken back in the mid 60's, I ran across photographs of some work train cars on the siding at Rockville, MD. My particular passion is passenger cars, and a unique passenger car subject was part of the work train. This particular car had something quite unique under it, and that was 4 wheel cast steel trucks. Further investigation with drawings of steel passenger cars revealed that this was a former class A-17 coach, one of two classes with 4-wheel trucks and all steel heavyweight construction. Only class A-15 coaches shared this unique combination. My next sense of curiosity was

whether these cars were still in revenue during the time frame that I model, of 1950 – 1955. By gosh, they were! But this car sure looked short, even for a coach. It turned out that this coach was the same length as the Class-Ae coach that was brought out by Bethlehem Car Works several years ago. The wheels started to turn, and I saw a new coach for my layout. Last winter Harry Meem and I were talking about old kits that we had, that probably would not get built. Since Intermountain now offered the Ae coach as a built-up, Harry confessed that his prospects of building the kit were slim, and that a reasonable offer could bring the kit to Timonium in February.



Equipment Diagram, Bill Barringer Collection

These cars were built by Pullman in 1914, in Lot # 4189. They were 72 seat cars with walk over seating,

and were listed as smokers. Because of this, they were kept in the “general pool” of equipment. In July

and August of 1939, the RF&P leased 4323 & 4329. In December of 1939, 4323 was used in some kind of interchange with the Pere Marquette Railroad between Toledo and Detroit. Three of the cars were used in mixed service. Number 4330 was used in West Virginia between Ripley and Millwood; 4332 was used from Kenova, West Virginia to Parkersburg, West Virginia; and 4334 (the subject of the model) was used Parkersburg to Kenova. in August of 1929. Perhaps these were “mixed” trains. A list, dated October 5th, 1953 suggests that cars 4320 – 4331 were to be added to the next condemnation list. A note suggests that two were to be held at Pittsburgh, and two be held at Connellsville, Pennsylvania to serve as protection for Rail Diesel Cars. This would have been in 1953, to protect trains 547 & 548. Norman Nelson recalls seeing a few of them in the coach yard at Camden in 1953 where they were held as spares and used at heavy demand times on trains such as the race track trains, other specials, and locals. The last time he saw one was on the “Apple Blossom Special” (Camden to Winchester, Virginia) in the spring of 1954. The last car in the class was taken out of service on August 13, 1954.

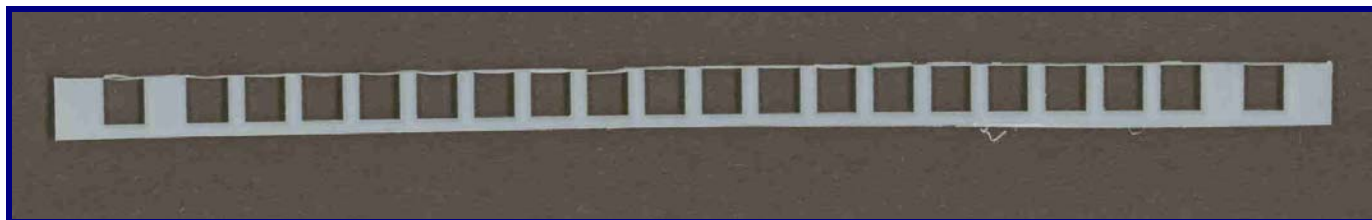
The Model

Just because the two cars were the same length over pulling faces, didn’t mean that they were the same car. There are two major differences. First, an Ae had 6 wheel trucks, and **all** of the windows on both sides of the car were different from an A-17. How to cure this? Walthers had just recently come out with heavyweight 4 wheel trucks that replicated those on the A-17 (Eastern Car Works part number 9005 could also be used), and New England Rail Service (NERS) (<http://www.newenglandrail.com>) makes paired windows as part number 200.

A Class A-17 coach has nine paired windows on each side of the car. There is a men’s and a women’s lavatory on one end of the car only. All windows are opposite each other for the entire length of the car.

Like the Ae, and the A-32a coach, these cars were first painted Olive Green, and then Blue. None of these cars appear to ever been painted in the Blue and Gray scheme.

First thing to do was to remove all of the windows from the sides. This was done with a razor saw, and included all of the material between the vestibule doors, and above the belt-rail. This included the letter-board. NERS paired windows were cut evenly for length and spacing, and a lavatory window added at opposite ends of the sides. When the sides are put together, the lavatory and paired windows are paired off, as they should be. NERS windows are taller than the windows on the Ae. I realized this would be a problem with simply cutting the letter-board from the windows and gluing it back to the side. The difference is about 2 scale inches. This meant that the difference would have to come out of the letter-board itself. Patience and a steady hand sawed off one row of rivets from the letterboard, as well as the windows. The letter-board was then glued back on top of the NERS windows, and a piece of .030” x .040” Evergreen styrene was used as a filler material for the initial saw cut through the letter-board. The rest of the Ae coach kit went together pretty much as indicated in the instructions for the basic body assembly. I used some brass castings to replace some of the styrene castings with the Bethlehem Car Works kit to improve durability. These included a body-mounted generator, vapor traps and hand brake chain multiplier. Though lavatory vents were supplied by BCW, they were replaced by vents grafted off of a Bachmann heavyweight combine. The eighteen Gold roof vents (nine on each side) were from Bethlehem Car Works, “kit-bits” (part 34), and not included in the Ae kit. (The 1938 photograph of an A-17 has Ward vents, Bethlehem Car Works, part 38). All grab irons and rain gutters were scratch built from .010” brass rod. The car was painted Floquil Dark Blue for the body and Engine Black for the roof and underframe. Decals were a mixture from Mt Clare Shops, Champ and Walthers.



Windows from original Ae kit.



Sides of the A-17 with the NERS windows added.

Prototype Car Specifics

The car that I chose to model is # 4334. It was built by Pullman on May 26th 1914. Two factors were involved in this number selection. First it was among the last three cars in revenue service, and second, the car had a body-mounted generator which I felt might add a bit more detail to the car. Car 4334 went through five mechanical changes during its 40 years of service. The first occurred August 11th 1917. At this time, it is not known what this change was, but the lightweight of the car went from 116,000 to 116,600. The second change occurred April 29th

1929. This included having the elliptical springs changed to 40". The cars weight again changed, from 116,600 to 116,300. The third change occurred January 20th 1934, with a flexible metallic steam heat connection, and again another weight change, from 116,300 to 116,800. There were two additional changes, on June 4th 1940, with the weight changing from 116,800 to 119,800, and on March 4th 1943, with the weight changing for the final time to 118,400. At this time, I don't know what caused these two weight changes.

Acknowledgements

Mark Morgan, Norman Nelson and Bill Barringer. A special thanks to these gentlemen for their assistance in the prototype information, without which their might not have been an article.

Materials

W. K. Walthers

933-1077, Four Wheel Trucks
Decal for car number from Walthers
heavyweight coach # 932-10110

Bethlehem Car Works

610, B&O Class Ae Coach
34, Gold Vents

Bachmann

Lavatory vent from Bachmann heavyweight
B&O coach # 160-89345

New England Rail Service

200, Paired Windows

Floquil

B110050, Dark Blue
B110011, Engine Black

Mt Clare Shop

5001, 1" Dulux stripes
3008, Lightweight letterboard

Champion Decal Company

B&O Passenger Decals for 4" Stripe

Precision Scale

Heavyweight vapor traps
Hand brake slack adjuster



Early 1960's at Rockville, MD. P.F Elliott photograph



A-17 Coach converted to Camp Car X4415 at Grafton, WV, July 16, 1955. Photographer unknown. Bill Barringer Collection



A-17 Coach #4330 at Jersey City, NJ, November 13, 1938. Photographer unknown. Raymond Stern Collection

PLANNED FOR THE NEXT ISSUE
A Color Guide for Painting B&O Model Structures
Building a Winton Place Station Kit
Modeling B&O Open Hoppers, 1919 to 1963, Class W-1, Part 2

To subscribe, send an email to:
bomodeler-subscribe@yahoogroups.com

To unsubscribe send an email to:
bomodeler-unsubscribe@yahoogroups.com